Croton ascendens (Euphorbiaceae), a New Liana from Eastern Amazonia

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ABSTRACT. A new species, *Croton ascendens*, is described as the second liana in its genus from South America. The new species is distinguished from *Croton pullei*, the other liana in the genus described from Surinam, by its palmately lobed leaves, bisexual racemes in inflorescences, and slightly cucullate linear-spatulate petals of staminate flowers. *Croton ascendens* is placed in section *Croton*, subsection *Croton*.

Croton L. is one of the largest genera in number of species (ca. 1,000 according to Webster & Burch, 1967) of the Euphorbiaceae, and is in urgent need of careful revision. It was last studied comprehensively by Mueller (1866, 1873). Although a natural group, the genus displays considerable polymorphism. The majority of species occur in the West Indies and South America, and their identification is very difficult. Recent papers on South American *Croton* (Lanjouw, 1931; Croizat, 1940, 1941, 1944; Jablonski, 1965) have not included the identification of the large number of herbarium specimens currently available in Amazonian herbaria (IAN, INPA, MG). Mueller's treatments (1866, 1873) give some help, but unfortunately they are out of date.

As part of ongoing research on the Euphorbiaceae of Amazonia, the authors are currently concentrating on the genus *Croton*. Fieldwork in Paragominas, Pará, Brazil has yielded a new species of liana, which is herein described.

Croton ascendens R. Secco & N. A. Rosa, sp. nov. TYPE: Brazil. Pará: Paragominas, Fazenda Vitória, 10 Apr. 1989, *Rosa & Uhl 5212* (holotype, MG; isotypes, K, MO, U). Figure 1.

Liana monoica, pilis stellatis vestita. Folia 3-lobata ad basin cordata. Inflorescentia bisexualis ex racemo glomerulorum constans. Flores masculini numerosi; calyce 5-lobato pilis stellatis obtecto; receptaculo piloso; petalis 5 liberis, lineari-spathulatis ad apicem cucullatis; staminibus 11, eorum 10 basi connatis, uno libero centralique. Flores feminei 1–3 in partibus basalibus medianisque racemi cum floribus masculinis nonnullis commixti; calyce 5-lobato; ovario subgloboso, stellato-pubescenti, disco undulato styloque 6-ramoso instructo.

Liana climbing on shrubs or trees, monoecious. Leaves alternate, chartaceous, trilobate, the lobes acute or acuminate, 15–20 cm long, 10–19 cm wide, with stellate hairs on both surfaces, glands irregularly distributed on the abaxial side, and toward the apex on the adaxial side, base cordate, with 5 pairs of lateral veins, veins prominulous on the abaxial side, petiole 5–11 cm long, cylindric, with two flat glands at the apex, stellate hairs covering the whole surface. Inflorescence a raceme of glomerules, terminal, solitary or geminate, bisexual, pistillate flowers 1–3 basal and medial, mixed with some staminate flowers, staminate flowers in glomerules along most of the rachis. Staminate flowers numerous, pedicels slender, 2 mm long, stellate-lepidote, calyx 5-lobate, lobes sagittate, stellate-lepidote without, glabrous within; receptacle pilose; petals 5, free, ca. 5 mm long, linear-spatulate, slightly cucullate at the apex, pilose; stamens 11, 10 connate basally, one free central, 5–5.5 mm long, with abundant long, silky hairs, disc 5-glandular. Pistillate flowers fewer, pedicels subulate, 2.5 mm long, stellate-lepidote, calyx 5-lobate, slightly connate at base, lobes acuminate, stellate-lepidote hairs outside, long silky hairs inside at the apex of the lobes; ovary subglobose, tricarpellate, ca. 2 mm long, 2.5 mm wide, with stellate hairs, disc undulate, with long and silky hairs, the styles 6 times bifid, 3–5 mm long, with long stellate hairs, apex glabrous. Fruit seen only in an early stage.

Distribution. Known only from mata de terra firme (Amazon forest) and capoeira of Paragominas, in Pará, Brazil.

Vernacular name: Algodão bravo (*Rosa & Uhl 5212*).

Paratype. BRAZIL. PARA: Paragominas, Fazenda Vitoria, 8 Oct. 1990, *Secco et al. 781* (MG).

Lianas are uncommon within *Croton*. Lanjouw (1931) described *Croton pullei* from Surinam, indicating it as the first species of the genus with this habit. He later (1939a) described variety *glabrior*, indicating that, according to the collector Rombouts,

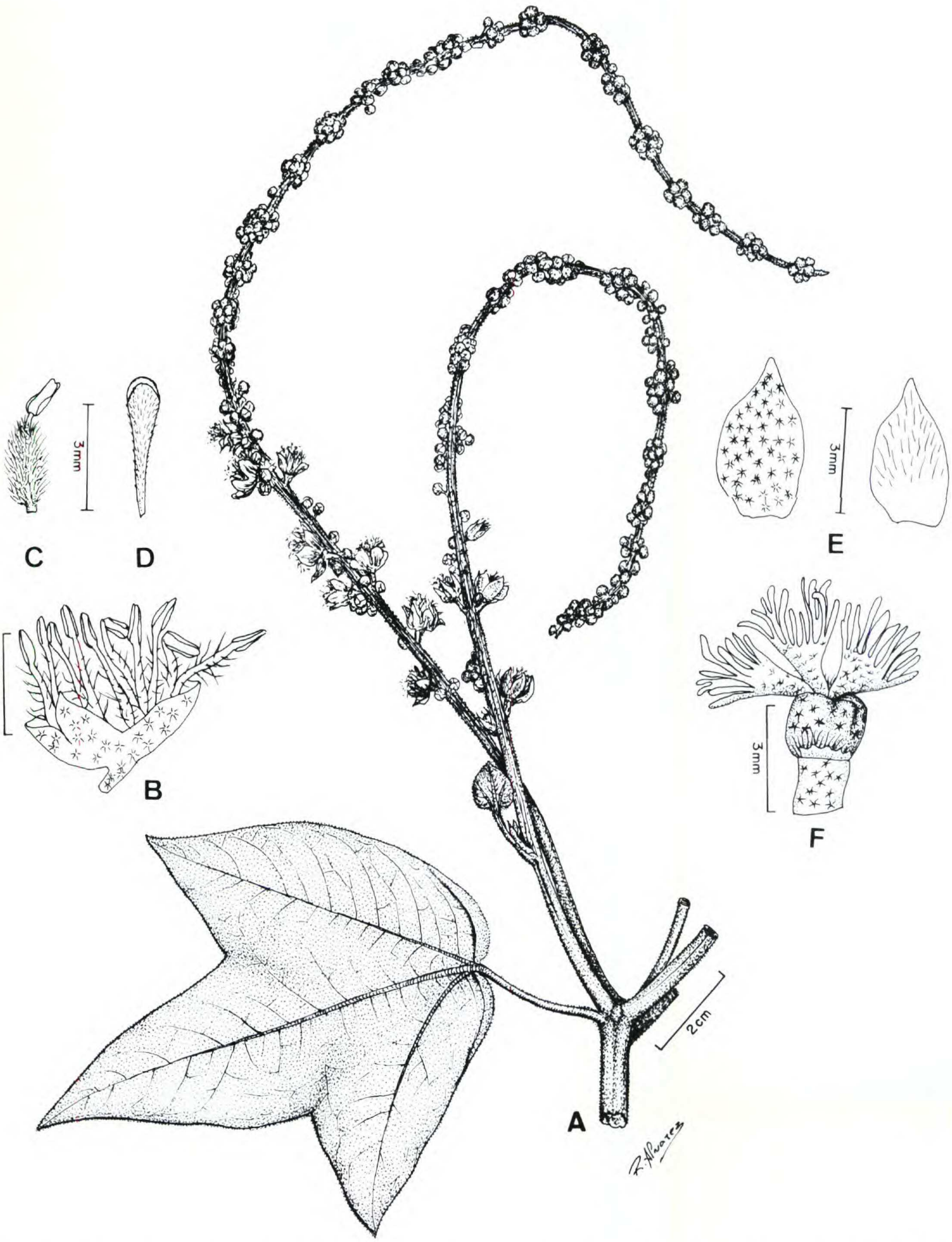

Figure 1. *Croton ascendens* (*Rosa & Uhl 5212*). —A. Habit with inflorescence showing staminate and pistillate flowers. —B. Staminate flower, without petals and central stamen. —C. Central stamen. —D. Staminate petal. —E. Pistillate sepals, abaxial view on left, adaxial on right. —F. Ovary.

this was a tree. Likewise, he suggested that *C. pullei* must be a tree and that the annotation made by its original collector, Stahel, must have been a mistake, as no species of *Croton* were known to be lianas. Lanjouw (1939b) published a correction for the habit of *C. pullei* as follows: "page 34, line 15, instead of 'Scandent shrub' read: 'tree or shrub (scandent?)'." However, recent studies on Amazonian

TABLE 1. Comparison of morphological characters of *Croton ascendens* and *C. pullei*.

C. ascendens	*C. pullei*
Palmately lobed leaves	Unlobed pinnately veined leaves
Inflorescence raceme of glomerules bisexual; pistillate flowers basal and medial; staminate flowers along most of the rachis	Inflorescence unisexual, racemose, the pistillate ones a simple raceme, the staminate ones a raceme of glomerules
Petals of staminate flowers linear-spatulate, slightly cucullate at the apex	Petals of staminate flowers obovate

Croton made by the senior author confirm that *C. pullei* is really a liana.

The affinities of *Croton ascendens* are not entirely clear, since no species closely resembling it has been found among the large collection of Amazonian *Croton* at the herbaria of MG, IAN, and INPA, and South American *Croton* (including Brazil) at the herbaria of RB, R, and SP. Although a liana, *C. ascendens* is quite different from *C. pullei*, especially in the characters cited in Table 1.

Because the female flower of *C. pullei* from the analyzed collections (*Stahel 76*, holotype, U) is in an early stage, it is difficult to compare its morphological characteristics with those of *C. ascendens*.

Croton ascendens is placed in section *Croton* subsect. *Croton* because of the bisexual lower cymules, the pentamerous, equal-lobed calyx in both the staminate and pistillate flowers, and the pilose receptacle of the staminate flowers.

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